

WHAT IS CLAIMED IS:

1. A pattern identification system, comprising:

an illumination device adapted to project light on a sample pattern;

a video camera unit adapted to magnify an image of the sample pattern

5 with a predetermined magnifying times to obtain an identifiable image of difference sufficient for identification;

a controller connected to the illumination device to turn it on or off, the controller further connected to the video camera unit to capture the identifiable image of the sample pattern; and

10 a programmable identification member connected to the video camera unit and the controller, the programmable identification member including a recognizing logic adapted to process the identifiable image so as to generate a difference between the identifiable image and the recognizing logic, and the programmable identification member adapted to identify the identifiable  
15 image outputted from the video camera unit;

wherein the controller controls the video camera unit to output the identifiable image to the programmable identification member for identification.

2. The pattern identification system as defined in Claim 1, further  
20 comprising a display device adapted to display an identified result outputted

from the programmable identification member.

3. The pattern identification system as defined in Claim 1, wherein the illumination device projects a particular wavelength and brightness of light according to various types of the sample pattern.

5 4. The pattern identification system as defined in Claim 1, wherein the video camera unit includes an optically magnifying device.

5. The pattern identification system as defined in Claim 1, wherein the video camera unit is adapted to capture a first image of the sample pattern so as to measure a reference coordinate of the sample pattern for selecting a  
10 predetermined position.

6. The pattern identification system as defined in Claim 1, wherein the video camera unit consisted of a first camera and a second camera, the first camera is adapted to measure a reference coordinate of the sample pattern, and the second camera is adapted to capture the identifiable image for  
15 identification.

7. The pattern identification system as defined in Claim 1, wherein the video camera unit consisted of a first camera and a second camera, the first camera is adapted to capture an image of a front surface of the sample pattern, and the second camera is adapted to capture an image of a rear  
20 surface of the sample pattern.

8. The pattern identification system as defined in Claim 7, wherein the second camera captures the image of the rear surface of the sample pattern penetrated through a transparent stage.

9. The pattern identification system as defined in Claim 1, wherein the video camera unit is selected from a Charge-Coupled Device or an electronic camera device.

10. The pattern identification system as defined in Claim 1, wherein the controller is selected from a group consisted of a control logical circuit, a control IC and a Central Processing Unit.

11. The pattern identification system as defined in Claim 1, wherein the programmable identification member is selected from a group consisted of an identification logical circuit and an identification database of a computer software .

12. The pattern identification system as defined in Claim 1, wherein the programmable identification member is able to identify features consisted of printing line structure, raised ink, pattern structure, printing color, fiber property, fiber component and fiber density.

13. The pattern identification system as defined in Claim 1, wherein the illumination device is consisted of a plurality of illuminations which are used to project a front surface and rear surface of the sample pattern.

14. The pattern identification system as defined in Claim 1, wherein the illumination device is consisted of a plurality of illuminations which are disposed above and below a periphery of a stage.

15. The pattern identification system as defined in Claim 1, wherein the illumination device includes a mechanism adapted to mechanically adjust its projecting direction so that it has an included angle with respect to a vertical direction.

16. The pattern identification system as defined in Claim 1, wherein the illumination device is consisted of a plurality of illuminations which project the sample pattern with multiple projecting angles so that the sample pattern appear multiple angular features.

17. The pattern identification system as defined in Claim 1, wherein the illumination device has a circular configuration which is arranged along an entire periphery of a stage so as to project uniform light on the sample pattern that can avoid errors of capturing image and identification; and the circular configuration of the illumination device is consisted of a single illuminator or serial connected illuminators.

18. The pattern identification system as defined in Claim 1, wherein the illumination device has a semicircular configuration which is arranged along a predetermined angular length of a periphery of a stage so as to project

uniform light on the sample pattern that can avoid errors of capturing image and identification; and the semicircular configuration of the illumination device is consisted of a single illuminator or serial connected illuminators.